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ABSTRACT

This paper reviews several definitions and descriptions of the term knowledge base, identifies potential sources, and offers a guide for teacher education faculty who are considering the need to undergird their programs with appropriate knowledge bases. Questions such as how to begin the process of building a knowledge base, the steps involved, and what questions to ask are addressed, with insights from the relevant literature as well as from experience. Some suggestions for teacher educators to begin constructing a knowledge base include: (1) analyzing and making explicit their own beliefs regarding the roles that prospective teachers must be able to fulfill in schools and classrooms; (2) seeking a reasonable degree of consensus with the liberal arts faculty through a variety of information gathering methods; (3) committing to the attainment of a program philosophy which will preserve and enhance institutional uniqueness; (4) developing courses and curriculum reflecting the program theme; (5) specifying desired program outcomes; (6) selecting a set of source documents containing essential knowledge; and (7) designing a program model. A list of 23 references is appended. (LL)

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Building a Teacher Education Knowledge Base

by

Doris L. Mueller

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Building a Teacher Education Knowledge Base

Introduction

Teacher educators have recently come under fire for operating without a clearly-defined knowledge base. Erudite study groups have proclaimed that there exists a body of knowledge on teaching, and that teacher preparation institutions are remiss if they fail to build their programs upon an appropriate knowledge base. States have rushed to enact legislation and establish new or improved standards intended to ensure the improvement of teacher preparation. The National Council for Accreditation of Teacher Education in its revised Standards, Procedures and Policies for the Accreditation of Professional Education Units (1990) makes explicit the requirement that teacher education units must base professional education programs "on essential knowledge, established and current research findings, and sound professional practice" (p. 45).

During the 1980s, lay groups, journalists, researchers, and educators at all levels have taken a renewed interest in teaching and teacher preparation and how these can be improved. A spate of articles and books have appeared which examine teachers, classrooms, and schools. Many of these publications are caustic and condemning, although a few such as Kidder (1989) are more sympathetic. Some have

advocated the establishment of national standards for prospective teachers; others would abolish undergraduate teacher preparation. Teacher education faculties have begun to consider the need to undergird their programs with relevant knowledge bases.

Knowledge Base Definitions

The now-popular term knowledge base, which was coined in the early 1980s, has many meanings. It may connote a specific set of technical skills or an evolving search for a better understanding of teaching. Knowledge base may be used to identify content to be mastered in specific disciplines such as science, reading, or history. Valli and Tom (1988) define knowledge base as "the entire repertoire of skills, information, attitudes, etc. that teachers need to carry out their classroom responsibilities" (p. 5), while Cummings (1989) defines it as the formal propositions, theories, claims, and procedures that are presented to teacher candidates in their teacher preparation programs. Shulman (1987) suggests the following as a tentative list of categories which make up the knowledge base: content knowledge, general pedagogical knowledge, curriculum knowledge, pedagogical content knowledge, knowledge of learners, knowledge of educational contexts, and knowledge of educational ends, purposes, and values. Many

researchers define knowledge base from the perspective of the classroom teacher. Ayers, for example (1990) discusses teacher characteristics and roles and describes a knowledge base for effective teachers. Several writers (Dill, 1990; Reynolds, 1989; Smith, 1983) have assembled collections of articles written by well-known researchers and scholars attempting to identify and describe the knowledge base(s) needed by teachers in order to be effective. Others have focused on one or another aspect of teacher knowledge, such as effective planning (Phelps, 1990), subject matter knowledge (Floden, et al, 1990;), or ethics (Eberlein, 1989).

Within the context of teacher education itself, there are divergent views relative to the definition and content of knowledge base. A defensive posture maintained by some faculties is that this is simply a new jargon which designates the content and pedagogy that has always comprised teacher preparation. Many look to educational research to prescribe a knowledge base, while others warn that the relationships between teaching and research findings are at best indirect and partial (e.g. Ayers, 1988). Overall, however, teacher educators are taking a critical look at themselves, their course syllabi, and their curricula in an effort to determine what, if any, changes should be made.

Knowledge Base Sources

Despite the lack of consensus as to what constitutes a knowledge base, there is no dearth of sources and resources as teacher education faculties attempt to define and identify an appropriate knowledge base (or bases). Clearly, one such source is the findings produced by educational research--primarily process-product research or research on effective teaching, which come from a psychological research tradition. Advocates of the use of research findings however often point out that research alone is an inadequate source from which to derive a teacher education knowledge base (e.g., Walberg, 1990).

In addition to research findings, another source for constructing a teacher education knowledge base is the liberal arts faculty and disciplines. The literature is replete with evidence that a knowledge base, to be adequate, must include subject matter mastery. Beineke (1988) for example points out the necessity for collaboration between teacher educators and content specialists. Ball (1990) says that subject matter knowledge seldom figures prominently in existing teacher education programs; it is simply assumed that such knowledge has somehow been acquired prior to entry into formal teacher preparation. However, according to Feiman-Nemser and Parker (1990), among others, this is an erroneous assumption. Often

teacher candidates have not had adequate opportunities to master their subject before beginning to teach. Shulman (1986) identifies three categories within content knowledge: subject matter content knowledge, pedagogical content knowledge, and curriculum knowledge, all of which must be included in the preparation of teachers. But Kennedy (1990) says that only in methods courses are prospective teachers given opportunities to make connections between these kinds of knowledge, amd that even here instructors usually take for granted a subject matter knowledge on the part of the students that may not exist. There is a real need for cooperation between teacher education and liberal arts faculties in constructing a knowledge base for teacher education.

One of the potential sources for building a teacher education knowledge base --classroom teachers--is still a somewhat controversial one. A number of writers, such as Leinhardt (1990), Shulman (1986), and Tom and Valli (1990) acknowledge the value of teacher knowledge, sometimes characterized as craft knowledge or "the wisdom of practice," but agree that it is insufficient for a knowledge base. Teacher beliefs and values can contribute to a knowledge base. The development and use of case study literature could capture examples of effective teaching and utilize them for teacher preparation. Schubert (1990)

explicitly values the experientially derived understandings that guide teachers, and points to the contributions made by John Holt, Herbert Kohl, and Sylvia Ashton-Warner, among others. It appears that the experienced teacher is an underutilized resource and that practitioners should become more fully involved in the building of a knowledge base. The current emphasis on regular involvement in the schools by teacher education faculty and on cooperation between colleges of education and public schools may facilitate ongoing dialogue relative to teacher preparation programs.

Making Local Decisions

How then does a teacher education faculty begin the process of building a knowledge base for their program? What are the steps, what questions should they ask themselves? The balance of this paper will attempt to address this concern, drawing upon the relevant literature, as well as experience.

Evertson (1990) says that, despite the lack of hard evidence as to what comprises effective teacher education programs, they should probably be built on broadly based studies in the humanities, social sciences, and physical science, and a thorough grounding in the subjects to be taught. Professional coursework should include recent research on teaching

and learning, help teacher candidates develop problem-solving skills, and teach them to use educational technology.

Galuzzo and Pankratz (1990) identify and describe five essential attributes of a teacher education knowledge base: a philosophy or set of beliefs, an organizing theme or program focus, a set of program outcomes, a bibliography which provides adequate knowledge to enable the entry level teacher to make informed decisions, and a program model that guides the development of the program.

One of the frequent criticisms levelled at teacher education programs is that they are simply a collection of courses which may be taught by instructors who hold very diverse beliefs and values. Sometimes teachers may deny the existence of a knowledge base in teaching because of the fragmented courses and field practice they have experienced. One way for teacher educators to begin constructing a knowledge base is to analyze and make explicit their own beliefs regarding the roles that the teachers they graduate must be able to fulfill in the schools and classrooms where they will teach. Not only must these beliefs be made explicit and public, but a reasonable degree of consensus must be sought through a variety of methods such as information gathering--reviewing the literature, hearing presentations, and visiting

other campuses; through self-study, utilizing questionnaires or other self-assessment instruments, and by engaging in informal exchange of views in small group discussions; and, above all, a commitment to the attainment of a program philosophy which will preserve and enhance institutional uniqueness.

The program focus will grow out of the faculty's cooperative determination of its educational philosophy. Courses and curriculum should clearly reflect the program theme, so individual faculty members must be able to explain how each course or experience contributes to that theme. Having a focus serves a variety of functions, such as helping to decide on course scope and sequence, selecting instructional strategies to be presented and used, and suggesting ways of evaluating the program.

Next, the faculty will need to specify desired program outcomes--i.e. describe the knowledge and skills that graduates of their program should possess. These expectations may also be used to evaluate both the students and the program, and will essentially operationalize the program focus. Although collaboration with the liberal arts faculty is necessary throughout the building of a knowledge base, it is probably at this point that the most vigorous debates will ensue, as decisions are hammered out relative to the proportion of content to pedagogy and

the degree to which method and material are to be combined or separated. Marks (1990) recommends that professional education should approach pedagogical content knowledge in more than one way--i.e. that there should be courses which examine and explore content relevant to children and that the existing coursework in generic pedagogy, such as management and evaluation, should be supplemented by work in curriculum or methods of teaching specific content areas. He advocates softening the distinction between content and method so that a math course, for example, while emphasizing content, should incorporate aspects of method.

Once the competencies and content of the prospective teacher are specified, the faculty will be able to select a set of source documents which they believe contains the essential knowledge a program graduate needs. Since "knowledge base" implies a body of literature which supports the curriculum, such a bibliography is a key component of the teacher education knowledge base.

Finally, a program model is devised, which may be either graphic or verbal. This model illustrates how the various elements of the program mesh to form an integrated whole. Galuzzo and Pankratz (1990) say this model should accompany every course syllabus, thus keeping the prospective teacher continuously

apprised of the contribution of each course or experience to the achievement of the program objectives.

Conclusion

Needless to say, this process of constructing a knowledge base that can be agreed upon by the teacher education faculty and supported by the liberal arts faculty who contribute to teacher preparation is not an easy task, and it should be expected that there may be many revisions of the original design. The search for a knowledge base is an endeavor that may, in many instances, have been foisted upon a college or faculty, but it is nevertheless a worthwhile one, and should improve teacher preparation demonstrably.

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